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| APPLICATION NO.                          | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/065,091                               | 09/17/2002  | Fang-Chen Luo        | 5486-US-PA          | 4158             |
| 31561                                    | 7590        | 12/12/2005           | EXAMINER            |                  |
| JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE |             |                      | WANG, GEORGE Y      |                  |
| 7 FLOOR-1, NO. 100                       |             |                      | ART UNIT            | PAPER NUMBER     |
| ROOSEVELT ROAD, SECTION 2                |             |                      | 2871                |                  |
| TAIPEI, 100                              |             |                      |                     |                  |
| TAIWAN                                   |             |                      |                     |                  |

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                   |                         |  |
|------------------------------|-----------------------------------|-------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>            | <b>Applicant(s)</b>     |  |
|                              | 10/065,091                        | LUO ET AL.              |  |
|                              | <b>Examiner</b><br>George Y. Wang | <b>Art Unit</b><br>2871 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 September 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13,24-33 and 44-61 is/are pending in the application.  
 4a) Of the above claim(s) 24-33 and 44-61 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-13 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 September 2002 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 15, 2005 has been entered.

***Election/Restrictions***

2. Newly submitted claims 56-61 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

This application contains claims directed to the following patentably distinct species of the claimed invention:

(1) the specifics of the LCD device comprising a transparent dielectric layer having a smoother upper surface than the bumpy organic insulating layer comprising a first embodiment corresponding to claims 1-13;

(2) the specifics of the LCD device comprising a transparent dielectric layer having a substantially planar upper surface comprising a second embodiment corresponding to claims 56-61.

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3. Currently, claim 1 generic. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

4. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 56-61 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Specification***

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-7, 9-10, and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (U.S. Patent No. 5,691,791, hereinafter "Nakamura") in view of Nakai et al. (U.S. Patent No. 6,144,429, hereinafter "Nakai").

8. As to claim 1, Nakamura discloses a liquid crystal display (LCD) device (fig. 27) comprising a first substrate panel (280), a second substrate panel (f295), and a liquid crystal layer (299) disposed between the panels, a plurality of pixel portions being

formed by respective electrodes (288, 297) for applying voltage to the liquid crystal layer, each of the pixel portions having an organic insulating layer (292) over the first substrate panel where the surface of the insulating layer has a plurality of protrude/recess structures, a conformal reflective layer (288) over the organic insulating layer, a transparent dielectric layer (294) over the conformal reflective layer where the dielectric layer has a smoother upper surface

However, the reference fails to specifically disclose a first transparent conductive layer over the dielectric layer.

Nakai discloses an LCD device (fig. 13) having a first transparent conductive layer (14) over the dielectric layer (light scattering layer (15), which functions as a dielectric passivation layer (col. 15, lines 29-30)).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first transparent conductive layer over the dielectric layer in the Nakamura device since one would be motivated to provide a configuration that makes it possible to control the reflective layer, as it is situated in between the transistor and transparent conductive layer, in order to provide a whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

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9. Regarding claims 2-5, Nakamura discloses the LCD as recited above where the first substrate panel (fig. 27, ref. 280) includes a glass panel (281) and a thin film transistor (TFT) (290) having gate, source, and drain electrodes, where the organic insulating layer (292) includes an acrylic photosensitive resin, and where the conformal reflective layer (288) included aluminum material (col. 7, ref. 51-53).

10. As to claim 6, Nakamura discloses the LCD as recited above, however, the reference fails to specifically a first conductive layer connected to the TFT for controlling the liquid crystals.

Nakai discloses an LCD device (fig. 13) having a first transparent conductive layer (14) connected to the TFT ((19), through the contact hole (22) and source electrode (25)) for controlling the liquid crystals.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first conductive layer connected to the TFT for controlling the liquid crystals since one would be motivated to provide a configuration that makes it possible to control the reflective layer, as it is situated in between the transistor and transparent conductive layer, in order to provide a high efficiency of light utilization (col. 14, lines 59-60) in the control of the liquid crystals in addition to improved whitening, power savings due to a reduced resistance, and higher speed of operation (col. 4, lines 61-67). Ultimately, this not only provides improved picture quality (col. 4, lines 65-66), but also a display device that is more easily controlled and is more stable for optimal performance (col. 2, lines 14-17).

11. Regarding claim 7, Nakamura discloses the LCD as recited above where the material forming the conformal reflective layer (fig. 27, ref. 288) includes an aluminum material (col. 7, ref. 51-53).

12. As per claims 9-10 and 12-13, Nakamura discloses the LCD as recited above further having a second substrate panel (fig. 27, ref. 295) that is aligned to the first, a second transparent conductive layer (297) over the second substrate panel, and a liquid crystal layer (299) between the conductive layers, the dielectric layer (294, 298) including a transparent insulating material, and a color filter layer (296) between the second substrate panel and the second transparent conductive layer.

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Nakai, and in further view of Kim et al. (U.S. Patent No. 6,693,689, hereinafter "Kim '689").

Nakamura, when modified by Nakai, discloses the LCD device as recited above, however, the reference fails to specifically disclose a dielectric layer having a color filter.

Kim '689 discloses an LCD device having a dielectric layer having a color filter (fig. 12, ref. 117).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a dielectric layer having a color filter since one would be

motivated to improve color purity and improve the contrast ratio as well as the viewing angle (col. 8, lines 5-15).

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Nakai, and in further view of Kubo et al. (U.S. Patent No. 6,819,379, hereinafter "Kubo").

Nakamura, when modified by Nakai, discloses the LCD device as recited above, however, the reference fails to specifically disclose a phase compensation plate and polarizer on the second substrate panel opposite the side of the liquid crystal layer.

Kubo discloses an LCD device having a phase compensation plate (fig. 1, ref. 7) and polarizer (fig. 1, ref. 6) on the second substrate panel opposite the side of the liquid crystal layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a phase compensation plate and polarizer on the second substrate panel opposite the side of the liquid crystal layer since one would be motivated to provide a satisfactory display with sufficiently high contrast (col. 5, lines 44-49) by minimizing the problems with an unsatisfactory black display and brightness (col. 1, line 62 – col. 2, line 10).

### ***Response to Arguments***

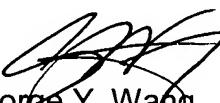
15. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



George Y. Wang  
Examiner  
Art Unit 2871

December 8, 2005